Shell Exploration & Production

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September 30, 2014

Re: Comments on the Re-Proposed Draft NPDES General Permit for Oil and Gas Geotechnical Surveying and Related Activities in Federal Waters of the Beaufort and Chukchi Seas

Shell Exploration and Production Company (Shell), for purposes of these comments representing Shell Offshore Inc. and Shell Gulf of Mexico Inc., the largest holders of Outer Continental Shelf (OCS) leases in the Beaufort and Chukchi Seas, appreciates the opportunity to respond to the EPA's re-proposal of the draft National Pollution Discharge Elimination System (NPDES) Geotechnical General Permit (re-proposed GGP), released on August 15, 2014. Shell is supportive of many of the EPA's revisions, but provides the following comments on the changes in the re-proposed GGP, and maintains its previous objections to those aspects of the re-proposed GGP that were not improved following the first round of public comments [1]. Although the EPA is only seeking commentary on a limited number of changes between the first draft GGP and the re-proposed GGP, Shell has attached a table tracking all comments that are still applicable to the re-proposed GGP, whether they address changes or provisions that have remained consistent between the two versions.

As explained below, the re-proposed GGP includes provisions that, among other things, lack a reasonable scientific or operational basis, impose redundant burdens upon geotechnical activities, and arbitrarily subject vessels conducting geotechnical activities to differential treatment. Several of the provisions further threaten the reasonable bargained-for development expectations of lessees.

I. The Spring Lead System Seasonal Restriction and Other Seasonal Closures are Not Supported by the ODCE and Should be Removed from the Final GGP

Shell objects to the inclusion of a new seasonal prohibition on discharge under the re-proposed GGP, the "Chukchi Sea Spring Lead System Seasonal Restriction" (Spring Lead Restriction) (EPA 2014, II.A.6.). The Fact Sheet provided by the EPA in conjunction with the re-proposed GGP explains that the Spring Lead Restriction is meant to protect the migration patterns of the bowhead whale and other species, and is supported in part by the NMFS's restriction in its 2012 Incidental

[1] Shell previously provided comments to the earlier, draft GGP on February 19, 2014. Shell reiterates and incorporates by reference any comments provided at that time, and not inconsistent with the comments provided herein.

Harassment Authorization (IHA) to Shell, which prohibits vessel entry into the Chukchi Sea through the Bering Strait prior to July 1 (EPA 2014 Fact Sheet, pp. 4—5).

The Spring Lead Restriction is not supported by the ODCE associated with the re-proposal. The ODCE describes and depicts the spring leads found in the Chukchi and Beaufort Seas at length (EPA 2014 4-7—4-16), but never makes any specific statements as to how geotechnical activities could impact the spring lead system. It also appears that the EPA has conflated geotechnical work with drilling, as the only statements made in the ODCE provided with the re-proposal addressing the impact of any kind of activity in the Chukchi Sea to the spring lead system provide that sensitive species migrating through the spring leads could be at risk in the case of an oil spill nearby. (EPA 2014 4-7, 5-8[2], 5-11). This concern is not relevant to the GGP, as drilling into hydrocarbon zones is not normally a function of the geotechnical activities covered by the permit at issue. In light of such fundamental gaps in its purported support, imposition of the Spring Lead Restriction is unreasonable.

Further, the Spring Lead Restriction is redundant, given the National Marine Fisheries Service's (NMFS) jurisdiction and regulations regarding the migration of marine mammals. Such redundancy is violative of the regulatory principles set forth in Executive Orders 12866 and 13563, which seek to maximize the benefits of regulation while reducing the burden and complexity of conflicting, onerous, and redundant regulatory requirements.

The EPA is correct in noting that Shell and other operators that engage in geotechnical activities in the Arctic OCS generally apply for IHAs from the NMFS for activities that may impact bowhead whales or subsistence users. (EPA 2014, 6-2). Under Section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA), the NMFS may authorize the incidental harassment of certain marine mammals providing, among other things; that the harassment does not have an "unmitigable adverse impact on the availability of these species for subsistence uses." The NMFS has been tasked with mitigating impacts to subsistence users through the IHA process. Given the lack of evidence to suggest geotechnical discharges will impact human health, or the environment, as detailed in Section 6 of the ODCE, combined with NMFS's expertise in the area of marine mammals and subsistence users, there is no reasonable scientific or regulatory justification for the EPA to insert itself into this process.

In addition to the Spring Lead Restriction, the re-proposed GGP still contains two whaling closures, which Shell strongly urged the EPA to remove in its comments on the first draft GGP. As stated in Shell's previous comments (Shell 2014, Att. 1, p.1), there is no technical or scientific information in the ODCE to support these closures. More specifically, the ODCE does not point to any scientific evidence indicating that Discharge 001 impacts or has the potential to impact human health or bowhead whales. The re-proposed GGP's continued inclusion of these closures without supporting evidence is arbitrary.

It appears that the EPA continues to rely instead on its position in the ODCE that even the "perception of contamination" may cause subsistence users to avoid harvesting whales (EPA 2014, xi). However,

[2] The ODCE does note that Bowhead Whales' "dependence on spring leads, described further below, combined with calving and feeding that occurs during the spring northward migration, further heightens their vulnerability to disturbance and oil spills in some areas (MMS 2006)." (EPA 2014 5-8). However, what constitutes disturbance is not articulated, nor is any reference made to the potential impact of geotechnical activities on the spring lead system.

there is also no information provided to indicate that the "perception" exists among North Slope subsistence users that geotechnical discharges contaminate bowhead whales.

The EPA is obligated to ensure that the final GGP is based on science, not "perception" or even more troubling, misperception. Yet there is a clear disconnect between the GGP's proposed closures and reality. The scientific reality, as conceded by the EPA in the ODCE, is that the discharges regulated under the re-proposed GGP are "unlikely" to cause an "unreasonable degradation of the marine environment" (EPA 2014, 6-27). The ODCE provides that pollutants associated with Discharge 001 "are not bioaccumulative or persistent" (EPA 2014, viii) and that there are "recent studies" that demonstrate that "metals associated with water-based drilling fluids are not readily absorbed by living organisms (Neff 2010)" (EPA 2014, viii).

Moreover, EPA has not provided any evidence that suggests subsistence users actually harbor misperceptions about the potential of geotechnical discharges to contaminate bowhead whales. The ODCE does not reference statements from Alaska Eskimo Whaling Commission (AEWC) representatives or comments relating to geotechnical discharges received at meetings on the North Slope. The EPA does mention in the ODCE traditional knowledge workshops it held on the North Slope; however, these workshops were held in relation to exploration drilling, not geotechnical surveys (EPA 2014, 6-20). The revised version of the ODCE issued with the re-proposed GGP does include new sections detailing the whaling activities of various North Slope communities. (EPA 2014 5-22—5-23). However, these descriptions do not provide any new information that would support the inclusion of whaling blackouts in the re-proposed GGP.

Also, Shell would like to again emphasize that the whaling closures in the re-proposed GGP are problematic, and legally improper, insofar as they delegate an element of EPA's regulatory authority. The EPA's authority to issue NPDES permits comes from Section 402 of the CWA. The EPA cannot delegate its responsibility for ensuring that a NPDES permittee complies with applicable laws and regulations. Yet, in the re-proposed GGP, the EPA persists in divesting its discretion to determine when a permittee can recommence Discharge 001 following whaling. The practical consequence of allowing a non-governmental organization this latitude under the re-proposed GGP is troubling and portends a potentially insurmountable bar to all future development for which Shell bargained in entering its leases with the Government. Theoretically, Shell or other operators could be in full compliance with the MMPA, yet could be forced to stop operations based on the discretion of a non-governmental organization. The EPA does not have legal support for this delegation of authority. Rather, the law is to the contrary. *See, e.g., U.S. Telecom Ass'n v. FCC*, 359 F.3d 554, 565 (D.C. Cir. 2004); *City of Dallas, TX v. FCC*, 165 F.3d 341, 357 (5th Cir. 1999); *Nat'l Ass'n of Regulatory Utility Com'rs v. FCC*, 737 F.2d 1095, 1143 n.41(D.C. Cir. 1984); *Sierra Club v. Sigler*, 695 F.2d 957, 063 n.3 (5th Cir. 1983); *Carter v. Carter Coal Co.*, 298 U.S. 238, 310–11 (1936).

As noted previously, the State of Alaska has taken a different regulatory approach to these issues, due to the lack of support for seasonal or whaling restrictions and closures. The State originally included whaling closures similar to those found in the re-proposed GGP in its draft Alaska Pollutant Discharge Elimination System (APDES) Geotechnical General Permit for the Beaufort and Chukchi Seas (ADEC 2013). However, based on comments submitted by the Alaska Oil and Gas Association (AOGA) during a preliminary comment period, the State removed the closures from the final State permit. The State of Alaska and the EPA are subject to the same statutory standards under the Clean Water Act (CWA). The EPA's decision to keep the whaling closures in the re-proposed GGP is irreconcilable with the State's decision that they are not warranted.

If the EPA refuses to leave the avoidance of subsistence impacts and marine mammal migration to the federal agencies charged with those responsibilities under the MMPA, it could require that applicants for NOIs comply with the MMPA during the performance of permitted geotechnical activities. The EPA could require that a permittee provide proof of consultation or authorization from the agencies directly responsible for MMPA protection that the proposed activity will not have an unmitigable impact on subsistence activities. This will allow a permittee to work directly with the federal agencies responsible for subsistence impacts and marine mammal migration, while providing the EPA assurance that these issues are addressed.

If the Spring Lead Restriction and whaling closures persist in the final GGP, they will severely impact the ability of an operator to conduct an effective geotechnical program in the U.S. Arctic OCS. The Arctic open water season is short and these restrictions and closures would further abbreviate the season for an indeterminate period of time. Depending on the duration of the spring or fall whale hunt, coupled with the non-governmental's discretion to preclude operations, these closures could theoretically preclude geotechnical work for an entire season, if not indefinitely. This uncertainty is untenable from a planning perspective. An operator cannot enter into a contract for a geotechnical vessel (not to mention the other accoutrements that could be necessary under this permit, including a helicopter and helo deck) based only on a chance that it may be able to complete a few days of geotechnical work during a season.

These substantial delays to geotechnical programs in the Arctic will not occur without consequence. Geotechnical activities provide the information necessary to support vital development infrastructure. The closures included in the re-proposed GGP will only act as a hindrance to quality geotechnical work, which would negatively affect the timing, quality, and safety of future development. And the threat of an indefinite bar to geotechnical activities thereby unreasonably prevents lessees from conducting the exploration, development, and production for which they bargained in entering into offshore leases with the Government. *See, e.g.*, *Centex Corp. v. Unites States*, 395 F.3d 1283, 1304 (Fed. Cir. 2005) ("The covenant of good faith and fair dealing . . . imposes obligations on both contracting parties that include the duty not to interfere with the other party's performance and not to act so as to destroy the reasonable expectations of the other party regarding the fruits of the contract."); *id.* (noting that "[t]he duty applies to the government just as it does to private parties").

The addition of a new seasonal restriction on geotechnical activities in the Chukchi and Beaufort Seas, in combination with the already existing whaling closures included in the first draft GGP and left unrevised in the re-proposed GGP, serves only to impede geotechnical activities in federal waters, with little to no scientific support apparent in the ODCE that human health or environmental benefits will be gained. Moreover, these closures and restrictions are redundant and unnecessary, given that NMFS already provides regulations to protect subsistence activities and marine mammals. Given the lack of substantive supporting documentation for these actions, and their redundancy with existing agency jurisdiction, they appear to be at worst arbitrary and capricious in their imposition, if not also in excess of the agency's statutory authority. Shell strongly urges the EPA to remove the Spring Lead Restriction and whaling closures from the final GGP.

II. Marine Mammal Observation Requirements do Not Belong in the GGP

The re-proposed GGP includes several revisions to the Environmental Monitoring Program (EMP) based on comments the EPA received on the first draft GGP. Shell is generally supportive of the EPA's changes, particularly its willingness to accept existing scientific data for baseline site characterizations and revisions to the Drilling Fluids and Drill Cuttings Deposition Evaluation that will allow for a smaller operational footprint and thus safer operations. Shell does, however, object to the insertion of a new marine mammal observation requirement in connection with Discharge 009, non-contact cooling water.

The re-proposed GGP has removed the marine mammal observation requirement from the EMP and inserted it as a requirement specific to non-contact cooling water discharges (Discharge 009; Permit Part II.B.J.). The revised language provides: "The permittee must observe for potential marine mammal deflection during periods of non-contact cooling water discharge (Discharge 009). Observations of potential marine mammal deflection must be reported in the following month's Discharge Monitoring Report (DMR)" (EPA 2014, II.J.2.).

Shell (as well as other operators) conducts an extensive, integrated marine mammal monitoring program during all exploration-related activities (including geotechnical work), pursuant to NMFS and FWS regulations under the MMPA. In accordance with the MMPA, applicants for an IHA or Letter of Authorization (LOA) from the trustee agencies, NMFS and FWS, are required to provide a monitoring and mitigation plan. The agencies evaluate these plans through a process of independent peer review and public review, prior to authorizing proposed activities. Plans often include a combination of observational platforms, vessel-based observers, aerial observations, and acoustic recorders.

These integrated programs, particularly the aerial and vessel-based components, provide a good understanding of the relative distribution of marine mammals in proximity to such exploration related activities, and the portion of the population of each species that could potentially be within a range of exposure to discharges. The addition of a monitoring requirement in the re-proposed GGP that is specific to non-contact cooling water (D009) is redundant, arbitrary, and confusing.

As described above, the primary regulation of oil and gas exploration activities (including geotechnical surveys) as they may affect marine mammals is under the authority of the NMFS and the FWS. The EPA's decision to impose an additional monitoring requirement into the re-proposed GGP for one specific discharge stream is an unnecessary duplication of the proper agencies' efforts to compile data on marine mammal behavior. Additionally, the behavior of marine mammals in and around a drilling operation is influenced by a number of factors and it is rarely possible to link an observed behavior with a specific operational activity (in this case, a particular discharge stream). Thus, requiring monthly reporting of potential marine mammal deflections specifically as a result of an encounter with a non-contact cooling water discharge plume would be highly speculative and would produce data of questionable quality. Moreover, the requirement would be both redundant and unnecessary due to the NMFS's and FWS's ongoing and extensive regulatory efforts to gather marine mammal data.

Shell strongly urges the EPA to remove the marine mammal observation requirement from the final GGP. The provision both lacks a reasonable scientific basis and is duplicative of those regulations put in place pursuant to the MMPA by the appropriate agencies responsible for the protection and research of marine mammals.

III. The Revised Requirements for Discharge 003 are Not Consistent with Existing Federal or State Vessel Regulations and Still Pose Substantial Operational Challenges that will Require an Expanded Operational Footprint

The first draft GGP required fecal coliform testing weekly (EPA 2013 , II.D. Table 3). Shell requested in its previous comments that the EPA remove the fecal coliform testing requirement from the final GGP permit and rely on the existing requirement for a certified-compliant MSD and periodic testing as required by the EPA's Vessel General Permit (VGP) to regulate sanitary wastes (Shell 2014, Att. 1 p. 13). The re-proposed GGP has been revised to require monthly fecal coliform testing, but has not changed the weekly BOD and TSS sampling requirements (EPA 2014, II. D. Table 3). Although Shell recognizes the EPA's attempt to respond to its comments on this issue, the EPA's revisions do not solve the operational challenges outlined in Shell's previous comments. Thus, Shell again requests that the EPA remove these testing requirements from the final GGP.

Shell would like to again note that sanitary wastes are a general vessel discharge, unrelated to the type of work the vessel is in a region to perform. Therefore, the EPA should regulate these discharges in the same manner as they are regulated under the VGP and other general permits for the region. As noted in Shell's comments on the first draft GGP, it appears that the EPA is regulating geotechnical vessels conducting oil and gas activities far more stringently than vessels unassociated with this industry. This differential treatment is thus unreasonable in light of the nature of the discharge regulated.

The testing requirement is also based on the unreasonable equation of geotechnical activities to exploration drilling. The fecal coliform testing requirement in the first draft GGP was taken wholly from the Exploration General Permits (EGP) for the Beaufort and Chukchi Seas. As in other aspects of this GGP, this approach fails to take into account the drastic differences between geotechnical activities and exploration drilling. More specifically, with regard to sanitary wastes, there are significant differences between an exploration drilling rig and a geotechnical vessel. Exploration rigs discharge a greater volume of sanitary wastes than do geotechnical vessels due to the greater number of personnel on board. Further, exploration rigs discharge sanitary wastes in a more concentrated area because they remain on-site nearly ten times longer than a geotechnical vessel.

Although Shell appreciates the EPA's efforts to revise the testing requirement to a monthly obligation, compliance with the monthly requirement would still require that a geotechnical vessel be equipped with a helo deck and would increase the helicopter travel normally associated with a geotechnical program. The holding time for a fecal coliform sample is eight hours and the nearest available public lab to test the samples is in Anchorage. [3] An operator will be challenged to quickly transport these samples off the vessel and to the lab. This testing, conducted with the methods currently required by the EPA, cannot be performed on board a vessel. Performing this testing on board would require that a vessel be outfitted with an incubator, as well as all of the consumables that go along with the fecal coliform analysis. In addition, personnel on the vessel would have to be certified in order to perform this testing and a microbiologist would be required to visit the vessel monthly in order to certify that the testing is being conducted properly. These logistical changes would be costly and counterproductive, resulting in an increased operational footprint that would cause unintended safety and environmental consequences.

[3] There is a lab in Prudhoe Bay, but commercial transportation will not facilitate the transfer of a sample off a vessel and to the lab within the holding time.

Furthermore, even if the shift to monthly fecal coliform testing effectively addressed Shell's logistical objections set forth in its first round of comments, the EPA has left in the re-proposed GGP weekly BOD and TSS sampling requirements, which pose the same logistical, safety, and operational challenges outlined above and in Shell's previous comments. Weekly helicopter traffic to and from geotechnical vessels not equipped with helo decks is still required under the re-proposed GGP due to the EPA's failure to change these sampling parameters.

Shell again recommends that the EPA modify this requirement to match the ADEC draft Geotechnical GP requirements, which include monthly TRC measurements as well as minimum and maximum TRC concentrations. (AKG283100, page 17). Sanitary waste discharges are not related to a vessel's geotechnical activities and thus should be regulated in a manner that is consistent with the VGP and or MARPOL. The VGP and MARPOL limit discharges and give standard concessions for discharging from a certified MSD unit, treatment standards and other requirements contained under Parts 5.1.1 and 5.1.2 or 5.2.1 and 5.2.2 of the VGP permit Annex IV of MARPOL Chapter 3 - Regulation 9.

IV. The Re-Proposed GGP Persists in Imposing Testing Requirements on the Oil and Gas Industry that are not Science Based

Although Shell acknowledges that the EPA is seeking public comment only on certain revisions to the re-proposed GGP, the requirements discussed below survived the first round of public comment, despite strong opposition, and must be addressed again. The inclusion of these provisions after substantial explanation and education on geotechnical vessels and operations appear to be based on an unjustifiable emphasis on this aspect of the oil and gas industry that is not supported by science, operational realities or any evidence provided in the ODCE. Shell again objects to these provisions and, as with its other suggestions herein, urges the EPA to issue a final GGP that is operational, as well as scientifically and technically accurate and reasonable.

A. The Effluent Toxicity Characterization Requirement Should be Removed from the Final GGP

The re-proposed GGP still requires that a permittee "conduct toxicity tests on the following discharges when chemicals are added to the systems: 002 (deck drainage); 005 (desalination unit wastes); 006 (bilge water); 007 (boiler blowdown); 008 (fire control system test water); and 009 (non-contact cooling water)" (EPA 2014, II.A.14). These tests "must be conducted once (1) per week, or once (1) per discharge event (if applicable), for the identified waste streams" (EPA 2014, II.A.14). For the reasons set forth below, Shell again requests that this requirement be removed from the final GGP.

The toxicity characterization requirements in the re-proposed GGP apply only to the general vessel discharges covered by the GGP. They do not apply to the discharges associated with the actual geotechnical activities themselves. Given that these discharges are unrelated to the type of work a vessel is performing, there is no justification for the EPA to regulate these discharges in a manner that is inconsistent with other general permits applicable in the region, including MARPOL, the VGP and the Offshore Seafood Processor's General Permit. Yet, in the re-proposed GGP, the EPA persists in imposing punitive requirements for a geotechnical permittee beyond those that are required of other permittees in other permits for the same waste streams. For example, the re-proposed GGP requires Effluent Toxicity Characterization screening for Non-Contact Cooling water if chemicals are added to the system (EPA 2014, II.A.13), while the EPA's VGP does not include this requirement. In fact, the VGP only requires that "when possible" non-contact cooling water be discharged while a "vessel is underway [.]" (VGP 2.2.19). The GGP's differential treatment of geotechnical activities is accordingly arbitrary.

As noted by Shell previously, the logistical challenges of this requirement are substantial. Even requiring one sample to be collected each year during the season would require significant logistical support, risk, and cost to collect these samples and mov e them the thousands of miles to the closest laboratory within 36 hours. In the VGP fact sheet, the EPA estimated that 72,400 vessels (domestic and foreign) would be impacted by the correlating (and less stringent) [4] VGP requirements. If the VGP requiremen ts are adequate for 72,400 vessels of varying sizes (all greater than 79 feet) throughout the U.S., then geotechnical vessels, whose numbers would presumably not approach 72,400, discharging the exact same material on site for a few days should not be subj ected to these onerous requirements. The average time that a geotechnical vessel will be on location is 1 —3 days (as described in the ODCE , pp. 6-12). This type of activity is very similar to how vessels operate all of the time.

Furthermore, the environmental benefit of this requirement as currently written is particularly unclear, given that best management practices (BMP) dictate the addition of chemicals to the discharge stream would require testing, despite the fact that their use is predicate d on safety and environmental protection concerns and standards. It appears that the EPA has again erroneously and arbitrarily ascribed to geotechnical activities the level of impacts attributable to exploration drilling, and now, after public comments to that effect, continues to fail to recognize the substantive difference between the two activities when it comes to discharges.

Shell again urges the EPA to remove these testing requirements from the final GGP. At a minimum, these requirements should be m odified in the final permit so that if chemicals are added to these discharge streams, the testing is required only once per season and can be performed pre-season.

B. The Requirement s for Deck Drainage (Discharge 002) Must be Removed from the Final GGP

The re -proposed GGP still requires that geotechnical vessels be equipped with an oil -water separator, and separate area drains for uncontaminated washdown and rainfall, and "washdown and rainfall that may be contaminated with oil and grease" (EPA 2014, II. C. 2.-3.). Further, the re-proposed GGP has kept the requirement that permittees sample and test discharges that are processed through the oil -water separator (OWS) (EPA 2014, Table 2 Footnotes 1, 3). Shell reiterates its objections to these requirements below, as they are inapplicable to geotechnical activities, and are impossible for geotechnical vessels to comply with , without expensive and unnecessary retrofitting.

These provisions again entirely disregard the fundamental differences between geotechnical activities and vessels, and exploration drilling and drilling rigs. The language inserted into the first draft GGP

[4] Notably, the re -proposed GGP toxicity testing requirements are more stringent even than the requirements included in the EPA's Exploration GPs. The Chukchi EGP requires a permittee to conduct "rapid automated toxicity testing… four (4) times per well at intervals that are designed to obtain a representative assessment of the discharge's toxicity" (EPA 2013, II.A.13g.1.i). In contrast, the re-proposed GGP requires this testing weekly or once per discharge event (EPA 2013, II.A.14.a). Owing to the inherent differences between longer period exploration drilling, and shorter interval geotechnical activities, the way this requirement is currently written into the re -proposed GGP requires this testing to occur much more frequently during the lower discharge geotechnical process than its exploration counterpart.

and kept in the re-proposed GGP comes directly from the EPA's EGPs for the Beaufort and Chukchi Seas and is premised on there being a possibility of petroleum contamination from the drilling floor, which has been exposed to materials from the hydrocarbon zone. There is very low likelihood that the decks of geotechnical vessels will be contaminated with petroleum products. The deck of a geotechnical vessel, which is drilling shallow holes to evaluate soil constituents, is not equivalent to the drill floor of an Exploration Drilling Rig, which is drilling deeper holes to evaluate hydrocarbon potential, and the requirements, particularly in this area, should not be the same.

Vessels chartered for geotechnical activities usually do not have their deck drains routed through an OWS and it is not feasible to request that these boats comply with this requirement. These drains are normally routed directly overboard with scuppers to control outfall which is consistent with MARPOL and VGP requirements. As the primary potential source of petroleum contamination onboard a geotechnical vessel is from fuel, lube, and hydraulic sources of the drilling and sampling equipment, the requirements in the draft Geotechnical GP BMP are sufficient to limit the petroleum contamination in deck drainage. These mitigation measures include secondary deck containment around all hydraulically actuated or rotating gears, as well as implementing good housekeeping measures for deck cleanliness. Additionally, as standard practice, spill response kits are onboard and are located within easy access to address any minor oil spills from the geotechnical gear that could potentially occur on deck and would in all likelihood be cleaned up before any discharge goes overboard.

Shell strongly urges the EPA to remove these unreasonable and unsupported requirements in their entirety, or at a minimum to align the final GGP with MARPOL requirements where possible and remove requirements that are technically infeasible for vessels conducting geotechnical activities, and simply not required of other similar vessels in different service.

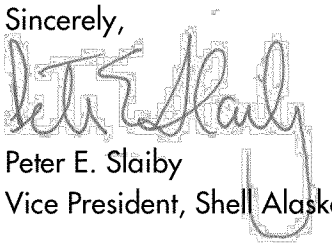
V. The EPA Has Not Met Its Obligations Under the Paperwork Reduction Act.

Under the Paperwork Reduction Act ("PRA"), 44 U.S.C. § 3501, et seq., "[a]n agency shall not conduct or sponsor the collection of information unless in advance of the adoption . . . of the collection of information" the agency has, among other things, (1) reviewed the need for the collection, (2) solicited and evaluated public comments on "whether the proposed collection of information is necessary for the proper performance of the functions of the agency" and on "the accuracy of the agency's estimate of the burden" of the collection, (3) submitted the proposed collection to the Office of Management and Budget ("OMB") for review, and (4) obtained OMB's approval for the collection. *See* 44 U.S.C. § 3507(a); *id.* § 3506(c)(2). For purposes of the PRA, a collection of information includes "recordkeeping requirements." *See id.* § 3502(3); *Darrell Andrews Trucking, Inc. v. Fed. Motor Carrier Safety Admin.*, 296 F.3d 1120, 1133 (D.C. Cir. 2002).

Despite significant record-keeping and reporting requirements (Permit Part III), including the re-proposed GGP's provision for recording and reporting of potential marine mammal deflections (Discharge 009), the EPA states only that it has "reviewed the requirements imposed on regulated facilities . . . and finds them consistent with the Paperwork Reduction Act . . . ." 79 Fed. Reg. 48,147, 48,148 (Aug. 15, 2014). *See also, e.g.*, 78 Fed. Reg. 70,042, 70,043 (Nov. 22, 2013) (same).

Shell respectfully requests that the EPA incorporate the changes identified in this let ter into the final GGP. If you have any questions please contact Susan Childs at (907) 646-7112.

Sincerely,



Peter E. Slaiby
Vice President, Shell Alaska

Attachment:

Table of Comments on the Re-Proposed Geotechnical GP for the Beaufort and Chukchi Seas

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
1.		2013 Fact Sheet, p. 7	"Geotechnical surveys are short in duration and, depending on targeted depth, range between 1 to 3 days to complete." "…activities authorized under the Geotechnical GP are similar in nature to those discharges associated with exploration drilling activities, but at much lower volumes" relative to discharges resultin g from exploratory drilling activities.	Geotechnical activity is limited in duration. This limited duration combined with the limited spatial extent of deposition (vertical and horizontal) does not result in significant deposition in the environment. This is known *a priori* and it negates the need for an EMP.	
2.		August 2014 Revised ODCE, Overall Conclusions, pp. 6-27	"EPA has evaluated the 12 discharges for the Geotechnical GP against the ocean discharge criteria. Based on this evaluation, EPA concludes that the discharges will not cause unrea sonable degradation of the marine environment under the conditions, limitations, and requirements established by the permit." "Together, those studies suggest that bioaccumulation of trace metals from water-based drilling fluids is low and reversible." "…In the discharge area, the effects are limited to the small discharge area and have been shown to have few long -term impacts" (relevant to benthic organisms) "These studies demonstrate that discharge of drilling fluids and cuttings will not result in a n unreasonable degradation of the marine environment during or after discharge activities." "Finally, the discharges from geotechnical surveys and related activities are very short in duration and long -term widespread impacts are not anticipated.	Shell would argue that the operational discharge requirements in the draft Geotechnical GP *alone* (i.e., effluent limitations as presented in Tables 1 -12) are more than sufficient to protect the marine environment. The criteria evaluations included in the EPA's ODCE do not justify, either individually or when combined, the inclusion of an EMP to the final Geotechnical GP.	The EPA's Effluent Limitations Guidelines (ELGs) are promulgated as regulations and —where applied —these ELGs are "protecti ve of the marine envi ronment." The reader is directed to the Alaska Department of Environmental Conservation Geotechnical GP ODCE, which does a more thorough job of explaining the rationale behind the ELGs. The application of the ELGs reinforces the manner in which the marine environment will be protected even if the final Geotechnical GP does not include an EMP requirement.
3.	1:Bioaccumulation and/or Persistence	August 2014 Revised ODCE , p. viii	"The discharges from geotechnical surveys and related activities to federal waters are not expected to cause an unreasonable degradation of the marine environment because pollutants associated with those discharges are not bioaccumulative or persistent".	The fact that the EPA does not articulate concerns in the ODCE related to bio accumulation or persistence indicates that an EMP requirement is not necessary and is unduly burdensome. The questions that the EMP requirements are intended to answer have already been answered by prior work published in the literature and current available information. There is no justification for EMP requirements backed by criterion 1 evaluation.	The EMP is not necessary because the ODCE concludes that the discharges are not bioaccumulative or persistent.

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
4.	2: Potential for Transport	August 2014 Revised ODCE, p. viii and 2013 Fact Sheet, p. 10	The potential transport "…effects would be limited by the short duration of activity…and the quantity and composition of discharges." "Due to the short duration of geotechnical borehole drilling and related activities…effects are likely to occur in a limited area and the extent and duration of effects are expected to be short term." "Drilling fluid and cuttings deposition will not result in significant accumulations on the seafloor"	Indeed, limited d uration and short -term effects of geotechnical discharge are indicated by the results of the EPA 2D advection diffusion equation model, which demonstrate insignificant deposition beyond 1 meter from the borehole location. Specifically, "at 100 meters across all current speeds and discharge rates, the thickness of deposition for the combined discharge of drilling fluids and drilling cuttings ranges from 0.04 to 3 millimeters." These are negligible depositions and are confined to a small spatial scale, both horizontally and vertically, and which do "not result in significant accumulations". These findings negate the need for a post -drill (Phase II) EMP requirement in final Geotechnical GP. There is no justification for EMP requirements backed by criterion 2 evaluation.	The EMP is not necessary because the ODCE concludes that the short duration discharges will not result in significant accumulations on the seafloor.
5.	3: Vulnerability of Biological Communities	August 2014 Revised ODCE, p. x	"EPA has completed a Biological Evaluation (BE) on the effects of authorized discharges on endangered, threatened, proposed, and candidate species. The BE concluded that the discharges 'may affect, but are not likely to adversely affect' ESA listed, candidate, and proposed, species, or their designated critical habitat areas."	Given this conclusion, there is no justification for EMP requirements backed by criterion 3 evaluation.	The EMP is not necessary because the ODCE concludes that the short duration discharges are not likely to adversely affect critical species. Additionally, the EMP data collection requirements will not answer these questions.
6.	5: Existence of Special Aquatic Sites	August 2014 Revised ODCE , p. x	"No marine sanctuaries or other special aquatic sites, as defined by 40 CFR 125.122, are in or adjacent to the Geotechnical GP Area of Coverage."	Given this conclusion, there is no justification for EMP requirements backed by criterion 5 evaluation.	The questions the EMP is attempting to answer are already decisively answered by the information provided in the ODCE.
7.	6: Potential Impacts on Human Health	August 2014 Revised ODCE, p. xi	"Current levels of contamination in subsistence food sources are low."	An EMP requirement is not necessary to limit contamination in subsistence food sources because the preceding criterion (e.g., bioaccumulation and persistence potential) addresses potential contamination i ssues. There is no justification for EMP requirements backed by criterion 6 evaluation.	Bioaccumulation potential and persistence of chemicals in the environment drive the likelihood of potential impacts on human health. The EMP is not necessary because the ODCE concludes that the discharges are not bioaccumulative or persistent.
8.	7: Existing or Potential Recreational and Commercial Fishing	August 2014 Revised ODCE, p. xii	"Based on the limited duration of the discharges authorized and the limits and requirements established in the Geotechnical GP, it is not expected that the discharges would affect fishing success or the quality of the fish harvested."	Given this analysis, there is no justification for EMP requirements backed by criterion 7 evaluation.	The questions the EMP is attempting to answer are already decisively answered by the information provided in the ODCE.
9.	8: Applicable Requirements of a Coastal Zone Management Plan	August 2014 Revised ODCE, p. xii	"As of July 1, 2011, there is no longer an approved Coastal Zone Management Act (CZMA) program in the State of Alaska, per AS 44.66.030, because the Alaska State Legislature did not pass legislation required to extend the program. Consequently, federal agencies are no longer required to p rovide the State of Alaska with CZMA consistency determinations."	The State of Alaska does not have an approved Coastal Zone Management Plan. There is no justification for EMP requirements backed by criterion 8 evaluation.	This criterion is not relevant at this time because the State of Alaska does not currently have a CZMP. This criterion does not justify the inclusion of the EMP in the GT permit.
10.	9: Additional Other Factors Relating to Effects of Discharge	August 2014 Revised ODCE, p. xii	"EPA has det ermined that the discharges authorized by the Geotechnical GP will not have disproportionately high and adverse human health or environmental effects with respect to the discharge of pollutants on minority or low -income populations living on the North Slop e, Northwest Arctic, and St. Lawrence Island, particularly the coastal communities."	Given this analysis, there is no justification for EMP requirements backed by criterion 9 evaluation.	The questions the EMP is attempting to answer are already decisively answered by the information provided in the ODCE.

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
11.	10: Marine Water Quality Criteria Pursuant to CWA Section 304(a)(1)	August 2014 Revised ODCE, p. xiii	"Because the effluent limitatio ns and requirements contained in the permit comply with federal water quality criteria, EPA concludes that the discharges will not cause an unreasonable degradation of the marine environment."	Given this analysis, there is no justification for EMP requirem ents backed by criterion 10 evaluation.	The questions the EMP is attempting to answer are already decisively answered by the information provided in the ODCE.
12.		August 2014 Revised ODCE, p. 1-2	"On the basis of the analysis in this ODCE, the RA will determine whether the general permit may be issued. The RA can make one of three findings…"	Based on the ODCE conclusions, Finding 1 is justified: "[t]he discharges will not cause unreasonable degradation of the marine environment and [the EPA should] issue the permit."	
13.		August 2014 Revised ODCE, p. 2-4	"The discharges from oil and gas geotechnical surveys and related activities authorized under the Geotechnical GP are similar in nature to those discharges associated with exploration drilling activities. However, the expected discharge volumes from geotechnical surveys and related activities are significantly less."	It takes significantly less time to drill a geotechnical borehole than it does to drill an exploration well. Further, drilling a geotechnical borehole will result in substantially less discharges. It is therefore not appropriate to require similar EMP monitoring to geotechnical activities as is required for exploratory drilling.	
14.		August 2014 Revised ODCE, p. 6-2	"EPA also assumes drilling fluids would not be used for geotechnical related activities"	This statement conflicts with the inclusion of D001 and the EMP requirements in the permit.	
15.		August 2014 Revised ODCE, p.2-1	"Geotechnical related surveys and related activities will include collection of soil borings…"	Using the word "collection" is inconsistent with the process of conducting geotechnical soil borings.	
16.		August 2014 Revised ODCE, *passim*	Throughout document, for example p. xi ("nautical miles") and p. 2-1 ("kilometers apart")	Inconsistent use of kilometers and miles to characterize distance between boreholes.	
17.		August 2014 Revised ODCE, p.2-1	"Geotechnical related activities could occur twice per year per sea, consisting of a total of 1 0 events per sea, or 20 times over the 5 -year term of the permit. A reasonable assumption of the scope of the equipment feasibility testing activities may include seafloor disturbance of half the size and scale of the mudline cellars completed by Shell in 2012 at the Burger and Sivulliq prospects, as feasibility testing of equipment are not expected to result in construction of the entire mudline cellar. The feasibility testing activities are expected to be completed approximately 7 –10 days per event. Shell 's mudline cellars are 20 feet wide and 40 feet deep."	The description of geotechnical related activities is not accurate. The ODCE assumes that the discharge would be equivalent to half of an MLC whereas the definition of "geotechnical related activities" is much broader and should evaluate more reasonable level of activity.	It is unreasonable to assess potential impacts of geotechnical discharges using unrealistic or overly conservative assumptions.
18.		August 2014 Revised ODCE, p. 2-2	"Seabed-based drilling systems do not require the use of drilling fluids as the borehole is cased from the seafloor mudline to the bottom of the hole."	Description of conventional rotary drilling for geotechnical surveys correctly indicates that the use of additiv es and drilling fluid is typically not required (but if drilling fluid/muds were warranted multiple batches would be mixed daily). The focus throughout the ODCE, however, is based on an assumption that drilling fluids with additives will be used for each borehole.	It is unreasonable to assess potential impacts of geotechnical discharges using unrealistic or overly conservative assumptions.
19.		August 2014 Revised ODCE, pp. 2-3—2-4	Section 2.2.: C omparison of Geotechnical Surveys to Exploration Activities	Several significant differences between these activities are not identified, including type of discharge, cutting size and depositional pattern.	
20.		August 2014 Revised ODCE, p. 2-3	"A detailed description of these activities is provided above in Section 2.1."	There is no detailed description of conventional methods of coring (just a few sentences), nor of "related activities."	The text in these sections of the ODCE indicates a significant lack of understanding of the physical activities associated with g eotechnical surveys. EPA should modify the ODCE to more adequately characterize these activities.

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
21.		August 2014 Revised ODCE, p. 2-4	"As discussed in Sections 3.1 and 3.2, the discharges from oil and gas geotechnical surveys and related activities author ized under the Geotechnical GP *are similar in nature* to those discharges associated with exploration drilling activities." (Emphasis added).	The premise that the exploration drilling discharges and geotechnical discharges are similar in na ture is incorrect . The discharges associated with geotechnical borings are significantly lower in volume and have less potential environmental impacts than the discharges associated with an exploration program. Moreover, Shell does not anticipate using muds except in deepe r borings, and we do not anticipate deeper borings to constitute a substantial part of our geotechnical programs. *If* drilling muds are used, the volumes are minimal and extremely short term in duration (e.g. a few hours for a single day (geotechnical) vers us intermittently for approximately 30 days (exploratory drilling). Sections 3.1 and 3.2 do not demonstrate that the discharges are similar in nature.	
22.		August 2014 Revised ODCE, p. 3-1	"No discharge of any waste stream onto stable ice."	The draft Geotechnical GP does not define "stable ice."	
23.		August 2014 Revised ODCE, p. 3-3	"Barite is a concern because it is known to contain trace contaminants of several toxic heavy metals such as mercury, cadmium, arsenic, chromium, copper, lead, nickel, and zinc (USEPA 2000)."	The author does not appear to understand current industry practice or current manufacturing practices for barite in the U.S. and the fact that constituents of concern are present at extremely low concentration s. Additionally, the trace quantities of heavy metals in barite have been subject to regu latory controls for many years. The barite mining practices over the years have been improved to result in low concentrations of any co -occurring metals with the barit e ($BaSO_4$), the concentrations of which are well below any ecologically -relevant and toxicologically -relevant thresholds. (Trefry and Smith 2003) The Petroleum Equipment Suppliers Association (PESA) developed a barite certification program and it is commonl y used by drilling fluids companies to document that their products conform to the offshore limits for mercury and cadmium. For many years drilling fluid suppliers have been providing barite that meets the discharge limits. During the Effluent Limitatio n Guidelines development process the EPA documented that control of mercury and cadmium indirectly controls other heavy metals. (EPA 821 -R-93-003 Page VI - 4). Several previous scientific studies have demonstrated that low levels of heavy metals found in c ommercial supplies of barite do not pose a significant environmental risk when discharged into the marine environment.	
24.		August 2014 Revised ODCE, p. 3-6	"All boreholes are assumed to require the use of water -based drilling fluids and drill cuttings, th ough in reality, most shallow boreholes may only utilize seawater."	This assumption is overly conservative and unrealistic assumptions result in unrealistic potential impact conclusions.	

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25.		August 2014 Revised ODCE, p. 3-8	3.6. Predictive Modeling of Discharges.	The currents used for modeling are not representative of conditions in the nearshore environment.	
26.		August 2014 Revised ODCE, p. 4-2	4.2.2. Circulation and Currents	The amount o f information presented in this section is extremely limited and appears to only be based on older NEPA documents. Newer and more comprehensive information on currents and circulation patterns in the northeastern Chukchi Sea have not been incorporated.	
27.		August 2014 Revised ODCE, p. 4-17	Section 4.4. Sediment Transport	There is no substantial discussion of the magnitude of natural sediment transport, specifically sedimentation rates in relation to the predicted deposition.	This critical factor should be described in the ODCE because it would further demonstrate that geotechnical discharges on the seafloor are negligible.
28.		August 2014 Revised ODCE, pp. 4-17—4.18	Section 4.5. Water and Sediment Quality	Although some information provided by industry is included, the overall amount of informa tion on water and sediment quality is very limited. In addition, the Shell (2013) citation is not included in the reference section.	It is unreasonable that the same level of information as is being required by the EMP is not included in the ODCE. The re quirement for an EMP is not justified especially when other available reports on sediment chemistry in the Chukchi Sea are not included.
29.		August 2014 Revised ODCE, pp. 5-1—5.2	Section 5.1. Plankton	There is significant information missing from oceanographic surveys conducted in 2008, 2009, 2010, 2012, and 2013.	
30.		August 2014 Revised ODCE, pp. 5-3—5.4	Section 5.3. Benthic Invertebrates	This section is written at an extremely broad, textbook -type manner and includes many statements that are no t necessarily applicable to U.S. Arctic conditions. In addition, nearshore lagoons are generally shoreward of the 3 -mile limit and therefore not part of the federal geographic scope.	The text in these sections of the ODCE indicates a significant lack of un derstanding of the existing natural conditions and results in unrealistic and overly conservative assumptions about potential impact.
31.		August 2014 Revised ODCE, pp. 5-3—5-4	Section 5.3. Benthic Invertebrates "Benthic communities can change in response to the following:"	The language in this section reflects a dramatic bias towards negative consequences of seafloor discharge. The bullet list ignores several other natural factors that regularly cause significant change to benthic communities, including, for example: changes in depositional environment over time, ice formation and resultant scouring, and seafloor disturbances attributable to walrus/seal/gray whale feeding activities.	
32.		August 2014 Revised ODCE, p. 5-4	Section 5.3 Benthic Invertebrates "Physical smothering of habitat due to deposition of drilling fluids and cuttings materials discharged on the ocean floor."	Physical smothering due to deposition may affect certain individuals, but is not at all likely to result in community level changes.	
33.		August 2014 Revised ODCE, p. 5-4	"The Chukchi Sea is characterized by sub -arctic climate, especially during the open-water season in the later spring and summer."	This statement is incorrect and reflects a poor understanding of the existing environme nt. It is well -accepted that the Chukchi Sea is habitat for cold -adapted fish species that exhibit unique ecological characteristics.	
34.		August 2014 Revised ODCE, p. 5-21	Section 5.9. Subsistence Activities and Environmental Justice Considerations	Increased traffic and time on site because of the requirements of the EMP has the potential to cause substantial impact on subsistence activities that has not been evaluated in the ODCE	

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35.		August 2014 Revised ODCE, pp. 5-19—5.29	Sections 5.9. and 5.10.	Repeated reference is made to SRB&A 2011, which is a traditional knowledge and stakeholder engagement workshop conducted exclusively to assess potential concerns and issues associated with exploratory oil and gas drilling. It is unreasonable to use outcomes from this workshop to then create numerous restrictions and EMP requirements associated with a geotechnical program. The workshop proceedings are also not available to the public for review.	
36.		August 2014 Revised ODCE, p. 6-6	Section 6.1.5. Bioaccumulation	Historically, the presence of potentially toxic concentrations of trace elements in drilling fluids was a concern. The ODCE incorrectly cites concentrations from drilli ng fluid studies in the 1980s. Barite used in drilling during the 1980s is not representative of barite used today. In 1993, the EPA established regulations for the maximum concentration of Hg and Cd in barite ore that can be used in drilling fluids in the U.S. OCS. These facts are ignored in the ODCE.	
37.		August 2014 Revised ODCE, p. 6-7	"Additional permit requirements include no discharge during bowhead hunting activities in the Beaufort and Chukchi Seas…"	There is absolutely no linkage between substantive impacts and the additional permit requirement. See Comment letter Section I.	There is no established reasoning that discharge blackout during whaling will increase the likelihood that bioaccumulation or persistence in the environment will continue to not occur.
38.		August 2014 Revised ODCE, p. 6-7	"Little information is available to assess the biomagnifications of drilling fluid discharges components; however, one study suggests that barium and chromium could biomagnify.	This statement is comple tely biased and not objective. The author completely ignores numerous studies conducted since the 1980s that demonstrates that bioavailability and bioaccumulation are negligible. Instead, the author focuses only on the oldest of the studies and only a single study.	
39.		August 2014 Revised ODCE, p. 6-8	"The Geotechnical GP prohibits all discharges on the ice surface."	There is no justification in the ODCE for this prohibition. The ODCE fails to reference or summarize the many years of studies beginning in the 1980s regarding on -ice disposal, which indicate that environmental impacts were typically not identified after sea ice melt.	
40.		August 2014 Revised ODCE, p. 6-10	Section 6.2.4.	Replace the word "absorbed" with "adsorbed".	
41.		August 2014 Revised ODCE, p. 6-11	Section 6.3.2.	The language in this section is vague and fails to mention that deposition greater than 1 cm is only for two cases in Table 6-2.	

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42.		August 2014 Revised ODCE, p. 6-20	"This ODCE evaluates the potential for bioaccumulation, pollutant transport, and significant adverse changes in ecosystem diversity, productivity and stability of biological communities in the Area of Coverage. The ODCE also evaluates environmentally significant or sensitive areas that are necessary for critical stages of marine organisms, the roles of these areas in the larg er biological community and the vulnerability of these areas to potential discharges. The ODCE further evaluates the potential for loss of esthetic, recreational, scientific and economic values, and impacts to recreational and commercial fishing. Each of t hese criteria relate directly to concerns raised regarding availability of subsistence resources, potential bioaccumulation and food tainting, human health, and overall species impacts. Overall, based on the analysis in the ODCE, the geotechnical surveying discharges authorized will not result in adverse impacts under each of these criteria, as defined by the CWA."	The ODCE clearly states repeatedly that geotechnical surveying discharges will not result in adverse impacts under the criteria.	No justification for the EMP.
43.		August 2014 Revised ODCE, p. 6-20	"Additionally, under the CWA, EPA has the authority to make modifications or revoke permit coverage if it identifies a basis to conclude that discharges will cause an unreasonable degradation of the marine environment."	Nowhere in the ODCE is there any *basis* for the draft Geotechnical GP prohibition of discharges during whaling, EMP requirements, effluent toxicity characterization requirements, or prohibition of on-ice disposal.	
44.		Re-Proposed NPDES Geotechnical GP, Title	AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) FOR OIL AND GAS GEOTECHNICAL SURVEYS AND RELATED ACTIVITIES IN FEDERAL WATERS OF THE BEAUFORT AND CHUKCHI SEAS	As indicated by the title, t he EPA has limited coverage under its permit to geotechnical activities undertaken for "oil and gas" related purposes. Geotechnical surveys are not unique to the oil and gas industry. There is no justification for the EPA to regulate discharges associated with oil and gas geotechnical surveys differently than it would regulate discharges associated with these same surveys if they were undertaken by a different industry or the government. The scope of coverage under the proposed APDES permit is not limited t o geotechnical discharges associated with oil and gas activities. The EPA should broaden the scope of coverage in its proposed permit so that it is consistent with the scope of coverage under the proposed APDES permit	
45.		Re-Proposed NPDES Geotechnical GP, p. 10, FIGURE 1	Figure 1: Area of coverage under the general permit.	The map of the coverage area, presented as Figure 1, extends beyond U.S. waters. Given that the EPA does not have jurisdiction under the CWA to regulate discharges in international wat ers, the map of the coverage area should be reformed in the final permit.	
46.		Re-Proposed NPDES Geotechnical GP, p. 10, FIGURE 1	Figure 1: Area of coverage under the general permit.	NPDES Geotechnical GP, Section I.B, page 11 describes the area of coverage. The map of the coverage area zones, presented as Figure 1, is very difficult to read and the boundaries marking the various coverage area zones requiring separate NOIs are not clear. Shell requests that an improved map, clearly indicating coverag e areas is included in the final GGP.	

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
47.		Re-Proposed NPDES Geotechnical GP, Section I. A., page 11	The GGP is applicable to "geotechnical related activities…[which] may include feasibility testing of mudline cellar construction equipment or other equipm ent that disturbs the sea floor, and testing and evaluation of trenching technologies"	Shell seeks clarification as to whether the final GGP will cover mudline cellar construction and trenching, as opposed to just the testing and evaluation of technologies used to conduct those activities. Shell would appreciate confirmation that it is the intention of the EPA to cover such activities under the final GGP. If these activities are not covered by the final GGP, Shell would seek clarification as to what permitt ing process the EPA proposes to cover these activities.	
48.		Re-Proposed NPDES Geotechnical GP, Section I.C.1, p. 11	A first time NOI submission is required for: (1) each facility (not previously covered under the Geotechnical GP), and (2) for each coverage area zone within which that specific facility will operate (as depicted in Figure 1).	One NOI should be sufficient for the vessel for the entire geotechnical program in a given year. Requiring multiple NOIs for the same activity significantly incr eases the administrative burden of complying with the permit with no appreciable environmental benefit.	
49.		Re-Proposed NPDES Geotechnical GP, Section I.C.4, p. 12	Along with the complete NOI, an applicant must submit to EPA copies of any ancillary activities reports, biological surveys, and/or environmental reports required by other regulatory agencies that will permit or otherwise cover under this general permit.	There are a number of regulatory requirements and timeframes that may not line up with the NOI requirement in the draft Geotechnical GP. Shell recommends that the EPA change this requirement to provide that a permittee shall list in the NOI the other authorizations and permits that it will seek coverage under, rather requiring the permittee supply each document. The latter approach could delay when the NOI is deemed complete.	
50.		Re-Proposed NPDES Geotechnical GP, Section II.A.6, p. 16	Chukchi Sea Spring Lead System Seasonal Restriction. The permittee is prohibited from discharging any waste stream within the Chukchi Sea lease deferral corridor, which corresponds to the area 3 -25 nautical miles offshore prior to July 1.	See Comment Letter, Section I.	
51.		Re-Proposed NPDES Geotechnical GP, Section II.A.14.a, p. 18	The permittee must conduct the echinoderm fertilization test (Section 16 of EPA/600/R95 -136) once (1) per week, or once (1) per discharge event if the waste streams are discharged during batch events, if the permittee is authorized to discharge the waste streams listed in *Permit Part II.A.13.b.* (above) (emphasis added).	The text of Section II.A.13.a references "Section II.A.13.b (above)[.]" However, this section does not exist. Nonetheless, Shell recommends removing this requiremen t for the above -stated reasons.	

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
52.		Re-Proposed NPDES Geotechnical GP, Section II.A.14.a, pp. 18—19	Echinoderm Rapid Automated Toxicity Test. The permittee must conduct the echinoderm fertilization test (Section 16 of EPA/600/R95 - 136) once (1) per week, or once (1) per discharge event if the waste streams are discharged during batch events, if the permittee is authorized to discharge the waste streams listed in Permit Part II.A.13.b. (above).	Shell recommends that the Echinoderm Rapid Automated Toxicity Test requirement be removed from permi t. The SPP toxicity testing alone is sufficient for evaluation of any toxicity associated with the geotechnical drilli ng operations, If D001 is used, it will be comprised primarily (96%) of seawater. Other drilling fluid constituents r elied on for geotechnical borings include simple viscosifiers such as xanthan gum and bentonite clay, which are used to clean cuttings from the wellbore. Additionally, small quantities of other products may be use d to maintain hole stability. These product s are similar to those used to drill water wells in other applications. The products that are required for exploration drilling to keep much deeper and larger holes stable and to control subsurface pressures are not required to drill simple geotechnical bo rings. The other "vessel" discharges should not require Echinoderm Rapid Automated Toxicity, or any other type of toxicity testing, as they have already been found under other permitting authorities not to be pose an environmental risk. This requirement is not justified by the ODCE and furthermore increases the safety and environmental risks and cost due to the significant logistical support needed to meet his requirement.	
53.		Re-Proposed NPDES Geotechnical GP, Section II.A.15, p. 20	The permittee must design and implement an environmental monitoring program (EMP) for geotechnical surveys and/or related activities.	There is no justification for the EMP Requirement in draft Geotechnical GP. The purpose of the ODCE is to evaluate if unreasonable degradation is likely to ensue as a result of the specific proposed activity. The ODCE definitively states that the proposed activities within the effluent limitation confines of the permit will not cause unreasonable degradation of the environment. (EPA 2 013, page xiii) Consequently, there is no scientifically valid rationale for inclusion of the EMP in the Geotech NPDES permit.	
54.		Re-Proposed NPDES Geotechnical GP, Section II.A.15.f.1, p. 23	The permittee must notify the Director, in writing, 7 calenda r days from receipt of the initial physical sea bottom survey data, if the data indicates the proposed geotechnical activity is located in or near a sensitive biological area, habitat, or in the v icinity of historic properties.	It is not clear what happens if a permittee is in or near one of these areas. This process that the EPA will engage in with a permittee following this notification should be described in the final Geotechnical GP.	

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
55.		Re-Proposed NPDES Geotechnical GP, Section II.A.15.g, p. 23	The EMP may be modified if the Director determines that the modification is appropriate. Modifications to the EMP may include changes in sampling location, changes in sample frequency, or changes to parameters to be monitored. This determination will be ma de by the Director upon receipt of the first -time NOI and/or annual NOI renewal package.	The EMP requirements are not supported. However, assuming the EMP requirement was justified and the EPA carried it forward to the final Geotechnical GP, this language creates numerous questions as to how an EMP could be modified. Does this mean the EMP may only be modified once per year during the annual renewal review? Would changing a part of the EMP constitute a violation of the permit terms and conditions if the mo dification was requested outside of the annual renewal? This extremely specific allowance for modifications to the EMP, which is an extremely complex and logistically challenging program, gives no operational flexibility and is another reason why the EMP a s written will be impossible to implement.	
56.		Re-Proposed NPDES Geotechnical GP, Section II.B.4.a, p. 26	Spring Bowhead Whale Hunting Restrictions (Chukchi Sea). The permittee is prohibited from discharging water -based drilling fluids and drill cuttings (i.e., Discharge 001) to federal waters of the Chukchi Sea during spring bowhead whale hunting by the communities of Barrow, Point Hope, Point Lay and Wainwright.	See Comment Letter, Section I.	
57.		Re-Proposed NPDES Geotechnical GP, Section II.B.4.a.1, p. 27	The permittee must cease Discharge 001 starting on March 25 and may not resume discharging until after whaling activities are completed.	See Comment Letter, Section I.	
58.		Re-Proposed NPDES Geotechnical GP, Section II.B.4.b, p. 27	Fall Bowhead Whale Hunting Restrictions (Beaufort Sea). The permittee is prohibited from discharging water -based drilling fluids and drill cuttings (i.e., Discharge 001) to federal waters of the Beaufort Sea during fall bowhead whale hunting by the communities of Barrow, Nuiqsut, and Kaktovik.	See Comment Letter, Section I.	
59.		Re-Proposed NPDES Geotechnical GP, Section II.B.4.b.1, p. 27	The permittee must cease Discharge 001 starting on August 25, and may not resume discharging until after w haling activities are completed.	See Comment Letter, Section I.	
60.		Re-Proposed NPDES Geotechnical GP, Table 2, p. 29	Toxicity Testing Note 3: Sample must be collected from the oil-water separator effluent.	See Comment Letter, Section IV. A.	
61.		Re-Proposed NPDES Geotechnical GP, Section II.C.2., p. 29	The permittee must separate area drains for washdown and rainfall that may be contaminated with oil and grease from those area drains that would not be contaminated so that the waste streams are not commingled.	See Comment Letter, Section IV.B.	

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
62.		Re-Proposed NPDES Geotechnical GP, Section II.C.2., Table 2, fn. 1, p. 29	Once per discharge event, the permittee must sample deck drainage discharges that are processed through an oil -water separator and test for sheen using the static sheen test in accordance with Appendix 1 to Subpart A of 40 CFR Part 435, Static Sheen Test. During periods of discharge, the permittee must also conduct a visual observation for visual sheen as determined by the presence of a film or sheen upon or a discoloration of the surface of the receiving water.	This requirement appears to have come directly from the EPA's Exploration GPs for the Beaufort and Chukchi Seas. Because geotechnical activities will not penetrate hydrocarbon zones, there will not be contam inated petroleum cuttings on the drilling floor. This requirement should be removed from the permit. Compliance should be demonstrated by performing a static sheen test on representative grab samples from the deck floor prior to discharging.	
63.		Re-Proposed NPDES Geotechnical GP, Section II.D.1, p. 30	REQUIREMENTS FOR SANITARY AND DOMESTIC WASTES (DISCHARGES 003 AND 004) 1. If authorized, the permittee may discharge sanitary and domestic wastes subject to the effluent limitations and requiremen ts herein. The permittee must comply with the effluent limits in this section at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this general permit.	This language makes it sound as though the permittee has the option of complying with either Section II.D.2 or Section II.D.3. Obviously, the option to comply with the MSD requirements included in Section II.D.3 is far less onerous and would be preferable to the requirements of Sectio n II.D.2. The EPA should clarify this is an either/or compliance option.	
64.		Re-Proposed NPDES Geotechnical GP, Section II.D, Table 3, p. 31	Fecal Coliform Bacteria Sample Frequency: Weekly Sample Type: Grab	See Comment Letter, Section III.	
65.		Re-Proposed NPDES Geotechnical GP, Section II.I, Table 9, p. 31	Fecal Coliform Bacteria Note 5: Must be maintained as close to this concentration as possible. Sample must be collected immediately after chlorination and prior to any commingling of the waste streams. The analytical detection limit for this parameter is 0.1 mg/l.	The language "[m]ust be maintained as close to this concentration as possible" confuses what the actual effluent limits are for TRC. The EPA should clarify and simplify the bacteri ological effluent limits. TRC should be able to be used to demonstrate compliance in lieu of fecal coliform, see the ADEC APDES permit requirements. (AKG283100, page 17)	
66.		Re-Proposed NPDES Geotechnical GP, Section II.D., Table 3, fn. 4, p. 32	If inclement weather conditions affect timely deliveries of samples, the permittee must notify EPA within 24 hours document the conditions and rationale in the following monthly DMR.	The EPA seems to acknowledge in this footnote that fecal coliform sampling i s not feasible for an Arctic offshore geotechnical program. However, simply allowing a permittee to notify the EPA in the event of inclement weather does not alter the fact that weather limitations will routinely result in a permittee being unable to compl y with this permit provision. Shell recommends that the EPA allow for TRC to demonstrate compliance with this requirement. Shell also recommends adding language similar to the footnote on Table 4 that monitoring is only required if a discharge occurs that day.	
67.		Re-Proposed NPDES Geotechnical GP, Section II.J.2., p. 38	The permittee must observe for potential marine mammal deflection during periods of non-contact cooling water discharge (Discharge 009).	See Comment Letter, Section II.	

#	ODCE Criterion	Document and Reference Section	Permit Language	Shell Comment	EMP Implication
68.		Re-Proposed NPDES Geotechnical GP, Section VIII.H.1.b, p. 44	CHANGES IN DISCHARGE OF TOXIC SUBSTANCES. The permittee must notify the Director as soon as he/she knows, or has reason to believe… 1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the general permit, if that discharge will exceed the highest of the following "notification levels": Two hundred micrograms per liter (200 µg/l) for acrolein and acry lonitrile; five hundred micrograms per liter (500 µg/l) for 2,4 -dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony[.]	This permit language matches neither the EPA's Nationally Recommended Water Quality Criteria nor levels set in the S tate of Alaska's Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Or ganic and Inorganic Substances. Because t hese discharge notification limits do not match either the federal or state water quality criteria, they appear to be arbitrary . Some of the toxic pollutants with "notification levels" do not even have water quality criteria for the protection of aquatic life in saltwater, e.g. acrolein, acrylonitrile, antimony . A simple statement that the permittee must notify EPA of any real or perceived exceedance of the existing toxic criteria limits would be demonstrably protective of the designated uses.	
69.		Re-Proposed NPDES Geotechnical GP, Section III.I, p. 46	Compliance Schedules	It is unclear what is meant by compliance schedules. Shell requests that the EPA clarify what these schedules relate to, what they require, and when they apply.	
70.		Re-Proposed NPDES Geotechnical GP, Section V.I, pp. 57—58	The permittee must give notice to the Director of the Office of Compliance and Enforcement at the address in Section III.B. as soon as possible of any planned physical alterations or additions to the permitted facility whenever: 1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR § 122.29(b); or 2. The alteration or addition could significan tly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the general permit, nor to notification requirements under Section III.H. ("Changes in Discharge of Toxic Substances").	Any modification done to a vessel must comply with MARPOL and the VGP and in some situations even be cert ified by the U.S. Coast Guard. In addition, monitoring and good housekeeping requirements would restrict and limit any inc rease of pollutants being discharged. This requirement would be onerous if not impossible for a permittee to comply with as vessels that conduct the work described in this permit are not on contract to a permittee year -round. Additionally, the requiremen t could discourage vessel owners from conducting upgrades to the vessel that could result in better measures to prevent pollution. Shell recommends changing the requirement to state that a permittee must report in its NOI renewal any vessel modifications t hat increased the quantity of pollutants discharged or that constituted a change that would lead to the vessel being classified as a new source.	
71.		Re-Proposed NPDES Geotechnical GP, Section VII, p. 65	Geotechnical Facility, for the purposes of this general permit, includes any floating, moored or stationary vessels, jack -up or lift barges with the capacity to conduct geotechnical surveying or related activities (defined above).	As defined, a "geotechnical facility" need not be performing work related to the oil and gas industry. However, throughout the draft Geotechnical GP there is oil and gas specific language. The EPA should be explicit as to the scope of potentially permitted discharges under the draft Geotechnical GP.	